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SANTA BARBARA • SANTA CRUZ

JOHN C. HEMMINGER
VICE CHANCELLOR FOR RESEARCH
OFFICE OF RESEARCH
160 ALDRICH HALL

IRVINE, CALIFORNIA 92697
Phone 949-824-5796 Fax 949-824-2095
JCHEMMIN@UCLEDU
[HTTP://SURFSCLPS.UCLEDU](http://SURFSCLPS.UCLEDU)

November 19, 2010

Professor Bruce C. Gates
Department of Chemical Engineering and Materials Sciences
University of California
3110 Bainer One Shields Avenue
Davis, CA 95616-5294

Dear Professor Gates:

The Basic Energy Sciences Advisory Committee (BESAC) has been charged by the Department of Energy Office of Science to assemble a Committee of Visitors (COV) to review the management processes for the Chemical Sciences, Geosciences, and Biosciences Division of the Basic Energy Sciences (BES) program. Thank you for agreeing to chair this BESAC COV panel. Under your leadership, the panel should provide an assessment of the processes used to solicit, review, recommend, and document proposal actions and monitor active projects and programs.

The panel should assess the operations of the Division's programs during the fiscal years 2008, 2009, and 2010. The panel may examine any files from this period for both DOE laboratory projects and university projects. The components of the Division that you are being asked to review are:

- (1) Atomic, Molecular, and Optical Sciences
- (2) Chemical Physics Research
- (3) Catalysis Science
- (4) Separations and Analyses
- (5) Heavy Element Chemistry
- (6) Geosciences Research
- (7) Solar Photochemistry
- (8) Photosynthetic Systems
- (9) Physical Biosciences

You will be provided with background material on these program elements prior to the meeting. The COV is scheduled to take place on April 6-8, 2011 at the BES/DOE Germantown location at 19901 Germantown Road, Germantown, Maryland 20874-1290. A presentation to BESAC is requested at its Summer 2011 meeting (as yet unscheduled). Following acceptance of the report by the full BESAC committee, the COV report with findings and recommendations will be presented to the Director of the Office of Science.

I would like the panel to consider and provide evaluation of the following four major elements:

1. For both the DOE laboratory projects and the university projects, assess the efficacy and quality of the processes used to:
 - (a) solicit, review, recommend, and document proposal actions and
 - (b) monitor active projects and programs.

2. Within the boundaries defined by DOE missions and available funding, comment on how the award process has affected:
 - (a) the breadth and depth of portfolio elements, and
 - (b) the national and international standing of the portfolio elements.

In addition to the above elements, the panel is asked to provide input for the evaluation of Basic Energy Sciences progress toward the Government Performance and Results Act (GPRA) long-term goals (attached). Each of the components (or sub-components, if appropriate) of the Chemical Sciences, Geosciences, and Biosciences Division should be evaluated against each of the four GPRA long-term goals. If a particular long-term goal is not applicable to a specific program component, please indicate so in the evaluation. Note that the guidelines specify ratings of (1) excellent, (2) good, (3) fair, (4) poor or (5) not applicable. In addition to these ratings, comments on observed strengths or deficiencies in any component or sub-component of the Division's portfolio, and suggestions for improvement, would be very valuable.

If you have any questions regarding BESAC or its legalities, please contact Katie Perine, Office of Basic Energy Sciences at 301-903-6529 or by e-mail at katie.perine@science.doe.gov. Diane Marceau, the Program Analyst for the Chemical Sciences, Geosciences, and Biosciences Division, will provide logistical support for the COV meeting. She may be contacted by phone at 301-903-0235 or by e-mail at diane.marceau@science.doe.gov. For questions related to the Chemical Sciences, Geosciences, and Biosciences Division, please contact Eric Rohlfing, 301-903-8165, or by e-mail at eric.rohlfing@science.doe.gov. Also, if I can be of any help with the process, please feel free to contact me, 949-824-6020 or by email at jchemmin@uci.edu.

Sincerely,



John C. Hemminger, Chair
Basic Energy Sciences Advisory Committee

Attachment

cc: H. Kung
E. Rohlfing
K. Perine
D. Marceau

Government Performance and Results Act (GPRA)
Performance Measures for Basic Energy Sciences (BES)

Basic Energy Sciences, Office of Science, U.S. Department of Energy

Long Term Measures

- Demonstrate progress in designing, modeling, fabricating, characterizing, analyzing, assembling, and using a variety of new materials and structures, including metals, alloys, ceramics, polymers, biomaterials and more – particularly at the nanoscale – for energy-related applications.
 - Definition of “Excellent” – BES-supported research leads to important discoveries that impact the course of others’ research; new knowledge and techniques, both expected and unexpected, within and across traditional disciplinary boundaries; and high-potential links across these boundaries.
 - Definition of “Good” – BES-supported research leads to a steady stream of outputs of high quality.
 - Definition of “Fair” – BES-supported research leads to modest outputs of good quality.
 - Definition of “Poor” – BES-supported research leads to limited outputs.
 - How will progress be measured? – *Expert Review every three years will rate progress as “Excellent”, “Good”, “Fair” or “Poor”.*

- Demonstrate progress in understanding, modeling, and controlling chemical reactivity and energy transfer processes in the gas phase, in solutions, at interfaces, and on surfaces for energy-related applications, employing lessons from inorganic, organic, self-assembling, and biological systems.
 - Definition of “Excellent” – BES-supported research leads to important discoveries that impact the course of others’ research; new knowledge and techniques, both expected and unexpected, within and across traditional disciplinary boundaries; and high-potential links across these boundaries.
 - Definition of “Good” – BES-supported research leads to a steady stream of outputs of high quality.
 - Definition of “Fair” – BES-supported research leads to modest outputs of good quality.
 - Definition of “Poor” – BES-supported research leads to limited outputs.
 - How will progress be measured? – *Expert Review every three years will rate progress as “Excellent”, “Good”, “Fair” or “Poor”.*

- Develop new concepts and improve existing methods for major energy research needs identified in the 2003 Basic Energy Sciences Advisory Committee workshop report, Basic Research Needs to Assure a Secure Energy Future.
 - Definition of “Excellent” - BES-supported research leads to important discoveries that are rapidly and readily available and feed, as appropriate, into use or projected use by the Department’s technology offices, by other federal agencies, and/or by the private sector. There is evidence of substantive interactions with the Department’s technology offices in most BES program areas.
 - Definition of “Good” - BES-supported research leads to a steady stream of outputs of high quality that show the potential to impact energy research.
 - Definition of “Fair” – BES-supported research leads to modest outputs of good quality that show the potential to impact energy research.
 - Definition of “Poor” – BES-supported research leads to limited outputs that show the potential to impact energy research.
 - How will progress be measured? – *Expert Review every three years will rate progress as “Excellent”, “Good”, “Fair” or “Poor”.*

- Demonstrate progress in conceiving, designing, fabricating, and using new instruments to characterize and ultimately control materials.
 - Definition of “Excellent” - BES-supported research leads to new concepts and designs for next-generation instruments and detectors for x-ray, neutron, and electron-beam scattering.
 - Definition of “Good” - BES-supported research leads to new instruments that are world class.
 - Definition of “Fair” – BES-supported research leads to modest outputs of good quality that show the potential to impact the concepts and designs for next generation instrumentations.
 - Definition of “Poor” – BES-supported research leads to limited outputs that show the potential to impact the concepts and designs for next generation instrumentations.
 - How will progress be measured? – *Expert Review every three years will rate progress as “Excellent”, “Good”, “Fair” or “Poor”.*